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Youths from "under-privileged" areas in Boston have deficiencies in the basic academic disciplines which prevent scholastic progress and may result in school dropouts. This program is administered by five Jesuit scholastics to fifty boys entering ninth grade, and will last four weeks.

Grouping will be according to the California Battery of achievement tests. The program focuses on basic English usage, both written and oral, and the basic skills of mathematics. In addition the program will provide scientific experiences designed to awaken interest and to help the student to perceive the relationship between science and mathematics. In the afternoon, the program includes various cultural and recreational excursions which are aimed at acquainting the student with opportunities for further development in the areas of science, art, and histroy, and at rendering the program more attractive. The English project aims to develop and increase verbal ability by increasing vocabulary, reinforcing all aspects of grammar, and developing a sense of correct pronunciation. The mathematics project aims to reinforce and develop knowledge of basic arithmetic operations and problem-solving skills. After a series of introductory lecture demonstrations, each student will specialize in one area of science, biology, chemistry or physics according to his interest.

Procedures and materials for all of these educational experiences are described. The afternoon excursions will be to sites of cultural, historical or scientific interest. The recreational program includes various athletic activities and outing.

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Harold Haizlip
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ATTACHMENT A

ACTION FOR BOSTON COMMUNITY DEVELOPMENT, INC.
and
FIVE JESUIT SCHOLASTICS

DEMONSTRATION
SUMMER PROGRAM
JULY-AUGUST, 1964

BOSTON COLLEGE HIGH SCHOOL
SOUTH BOSTON, MASSACHUSETTS

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ED001115

JESUIT SUMMER PROGRAM

INTRODUCTION

Many of the youths of the so-called "under-privileged" areas of the city of Boston experience deficiencies in the basic academic disciplines. Such deficiencies prevent scholastic progress, and not infrequently, result in school drop-outs as soon as the law allows. While the slower learners drop out of school, the more highly endowed are unable to pass rigorous college entrance requirements, and their talents remain undeveloped.

Forty-five to fifty boys from thirteen to sixteen years old have been selected from Roxbury, Charlestown, and the South End. The students are boys who are entering the ninth grade and whose most recent reading score was not more than one year and five months above or below their present grade level.

There will be three fifty-minute class periods, five days a week for four weeks. The students will be divided into four or five flexible groups and ranged according to their present level of achievement. The norm of this division is the California Battery, a series of achievement tests administered by the Research Department of A.B.C.D.

The Program focuses on basic English usage, both written and oral, and the basic skills of mathematics. In addition, the Program will provide scientific experiences designed to awaken interest and

to help the student to perceive the relationship between science and mathematics.

In the afternoon, the program includes various cultural and recreational excursions which are aimed at acquainting the student with opportunities for further development in the areas of science, art, and history, and at rendering the Program more attractive.

In a preliminary two-week period, the students are tested and interviewed.

Objectives:

1. Improved knowledge of the basic structure of the English language.
2. Improved facility in the use of the English language.
3. Improved knowledge of basic mathematics and the scientific method.

Personnel: The Project will be conducted by five Jesuit scholastics with appropriate graduate degrees and teaching experience.

ENGLISH PROJECT

A. INTRODUCTION

The English project is a program of learning experiences designed to improve English usage both in speaking and in writing. The criterion of the grouping is the California Reading Test (administered by the Research Department of A.B.C.D.) and the California Language Test (administered by the teachers of the English project).

B. **OBJECTIVES:**

General: to develop and increase verbal ability for the purpose of more accurate oral and written expression.

Specific: (a) to increase vocabulary;

(b) to reinforce knowledge of the more commonly employed parts of speech (noun, pronoun, verb, adjective, adverb);

(c) to develop ability to use the mechanics of the sentence for more accurate written expression;

(d) to convey understanding of the structure and function of the paragraph;

(e) to develop a sense of correct pronunciation.

C. **PROCEDURES:**

(a) To increase Vocabulary.

1. Common Experience

Materials: blackboard and chalk

Purpose: to provide a starting point for both teacher and student.

Technique: Students will be asked to mention as many words as they can from some activity or experience with which they are familiar (baseball game, T.V. western, excursion, etc.). From these familiar words, further words can be derived (synonyms, more vivid words, etc.)

2. Films

Materials: Film, projector, etc. Films will be selected from the Boston Public Library at junior high level. Content of films will be based on preferences indicated in the S.R.A. What I Like to Do interest inventory.

Purpose: to provide context for learning experience.

Technique: Film will be shown to students to supply context for vocabulary. Teacher will select words in a pre-viewing of film. Students will supply meaning from context through classroom dialogue. (The same film will be used for other purposes in the same class period.)

3. Readings

Materials: Be A Better Reader, blackboard and chalk.

Purpose: To provide context for learning experience.

Technique: Selections to be read by student. Same procedure as in number 2 above. (Readings can be used for other purposes in the same class period.)

4. Vocabulary Exercises

Materials: Be A Better Reader: working with root words, prefixes, and suffixes. Blackboard and chalk.

Purpose: To teach recognition of new words by analysis.

Technique: Brief instruction by teacher on the meaning and use of roots, prefixes, and suffixes. Demonstration by teacher. Exercises on same in Be A Better Reader. Best done orally with full participation to maintain interest, insure participation, and to check on understanding.

5. Word Games

Materials: Games taken from Bernard Kingsly, Reading Skills. Others will be adapted or devised by teachers.

Purpose: To review words learned and to introduce other new words.

Technique: Example of such games--Baseball: Two teams of indefinite size.
Purpose of game: to improve comprehension of root words.

Procedure: A student might pitch the word faithfulness. The batter must respond with the root word faith in order to make first base. The next batter, if correct in his answer, moves the first batter to second base. The first batter continues to home plate if four correct answers are given.

* * * * * *

(b) To reinforce the more commonly employed parts of speech (noun, pronoun, verb, adjective, adverb)

Note: Much of the instruction in this area can be carried out by indirection. In the course of vocabulary building, written composition, selected readings, etc., the parts of speech and their functions will be pointed out or drawn out of the students.

1. Composition in Common

Materials: Writing equipment for students, chalk and blackboard for teacher (or student)

Purpose: To point out parts of speech as a source of variety in writing.

Technique: The teacher (or a student) will compose with the students a description of a previous day's excursion, a film, etc. All will participate. Students will work with teacher in notebooks. Then, sentence by sentence, class can expand the composition by insertion of more accurate nouns, more expressive verbs, more colorful adjectives, and more vivid adverbs.
Comparison and contrast to original. After this type of exercise has been done a few times in common, students will be asked to perform this task alone.

* * * * * *

(c) <u>To develop the ability to use the mechanics of the sentence for more accurate written expression</u>.

Note: The mechanics of the sentence will be taught in an inductive manner. There will be no drill, no memorization of "hard-and-fast" rules.

1. Letter writing

   Materials: Film, projector, etc.

   Purpose: To develop a concern for clear written expression.

   Technique: A short movie will be shown. The students will then be told to write a brief letter to one of their friends describing the film. Prior to the writing, the teacher will draw from students the main divisions of a letter. Each student will then write letter. From these, a few will be mimeographed exactly as they were written. The following day, these will be corrected in class by the students.

2. Mimeographed unmarked sentences forming a short paragraph.

   Materials: Mimeographed sentences prepared by the teacher.

   Purpose: To review mechanics of the sentence.

   Technique: A series of unmarked, unpunctuated sentences about one topic will be mimeographed for the students, who will then be asked to unravel them, deriving their meaning by proper capitalization and punctuation.

3. Short paragraphs about "Favorite Things".

   Materials: Writing equipment, etc.

   Purpose: To review mechanics. This exercise can

be used as an introduction to the study of the paragraph.

Technique: The teacher will name a few of his favorite things, e.g., crowds in a subway, Louis Armstrong playing the blues. Students will then be asked to note five of their favorite things. These will then be expanded into a paragraph.

* * * * * *

(d) <u>To convey an understanding of the structure and function of the paragraph</u>.

1. Instruction in the topic sentence, unity of the paragraph, coherence.

2. Study of well-knit paragraphs from <u>Be A Better Reader</u>.

Note: This will be the last item studied. Time may prohibit total development.

* * * * * *

(e) <u>To develop a sense of correct pronunciation</u>.

1. Review of basic sounds.

Materials: <u>Be A Better Reader</u>

Purpose: To recall vowels, consonants, blends, etc.

Technique: Oral review of pronouncing exercises in students' text.

2. Use of tape recorder.

Materials: tape recorder, etc., <u>Be A Better Reader</u>.

Purpose: auditory discrimination.

Technique: Students will tape their own voices by reading a selection from text, e.g., "Young Viking Sailor", pp. 30-31. Students in class will then be asked to comment

on both the good and bad points of the reading, noting correct pronunciation, full vowels, final consonants, etc.

3. Use of records from the Boston Public Library.

Materials: Phonograph, records, etc.

Purpose: To develop an awareness of correct and forceful speech.

Technique: Students will listen to a record selected by the teacher from the B.P.L. collection, e.g., short story, poems, or famous speech. Records will be selected with an eye to grade level and interest.
After listening, students will be asked to imitate as closely as possible the pronunciation of the reader. Some of the selections will have been previously mimeographed.
Class criticism.
Note: Preparatory to class criticism, an attitude of charity, mutual self-help and fairness will be established between the teacher and the students and among the students themselves.

4. Readings

Materials: Be A Better Reader

Purpose: Listening acuity.

Technique: Student will read a short selection from text; other members of the class listen without following the text.
Teacher will ask prepared questions after the students' questions to test for listening acuity.
Class criticism of reader's performance (pronunciation, phrasing, expression, etc.)

5. Films
Materials: Film and projector.

Purpose: Visual discrimination, organization.

Technique: A short film will be shown. After the showing, a discussion will be held to determine organizational pattern, as well as to provide exercise in diction and expression.

Tentative Film Selections:

American Revolution
Ancient Rome
Introduction to the United States
Battle of San Pietro
Birth of a Volcano
Boston, City of Yesterday and tomorrow (Lexington & Concord)
Day with the F.B.I.
Julius Caesar, Act III, Scene 2
The Library
Pearl Harbor
Preparing Your Book Report

MATHEMATICS PROJECT

INTRODUCTION

The mathematics project is a program of learning experiences reinforcing knowledge of basic arithmetic operations and problem solving skills. Groups will be formed according to the arithmetic segment of the California Battery.

OBJECTIVES

General: to reinforce and develop basic skills in mathematics.

Specific: to reinforce and develop basic skills in mathematics, i.e., the skills of
(a) addition
(b) subtraction
(c) multiplication
(d) division
(e) problem solving

PROCEDURE

To reinforce and develop basic skills in mathematics by (e) problem solving.

A. Presentation of problems based on physical situations, i.e., range limitations due to the rate of rocket fuel consumption.

(1) Materials: Be A Better Reader, Book I (2nd Edition, Prentice Hall: New Jersey, 1963), especially pp. 8-9, 22-23, 36-37, 45, 52-53, 66-67, 80-81, 94-95, 106-107.

Blackboard and chalk

Paper and pencils

(2) Purpose: to develop a logical approach to word problems.

(3) Techniques: the practice of logical approach to word problems by means of the physical science problems listed above under "Materials".

B. Drill exercises implementing skills taught.

(1) Materials: mimeographed exercise sheets of problems dealing with physical situations.

Writing materials, etc.

(2) Purpose: to give each student practice in solving word problems.

(3) Techniques: students will work out solutions of mimeographed exercises at desks; they will do some problems at the board.

Similar materials and techniques will be used to attain the other specific objectives (cf. above). However, a much greater reliance will be had on mimeographed materials, e.g., in the reinforcement of the operation of addition, we will make use of the number line construct: a number will be the equivalent of a

directed line segment. This makes a graphic illustration of the operation of addition, and this construct can be used similarly for the other indicated operations.

Following is the scheme of development:

First week:
(1) Addition & subtraction of
  (a) whole numbers
  (b) decimals
  (c) fractions
(2) Use of plus and minus signs to indicate direction of segment
(3) Use of parentheses
(4) Problem solving

Second week:
(1) Multiplication of
  (a) whole numbers
  (b) decimals
  (c) fractions
(2) Problem solving

Third week:
(1) Division of
  (a) whole numbers
  (b) decimals
  (c) fractions
(2) Problem solving

Fourth week:
(1) Review of first three weeks
(2) Problem solving

Third Period Activities

The third period each day (from 3 August to 28 August) will provide the opportunity for specialization according to the interests of the individual students. These interests will be determined by the Interest Test administered on 20-21 July, and by subsequent standardized interviews on 27-28 July.

In addition, during the first week of the formal program (3 August to 7 August), the third period will be used for introductory lectures (cf. 2 below), for science demonstrations -- both preceding afternoon educational trips. During the final three weeks of the program, the third period will be devoted to specialization in biology, chemistry, and/or physics; to a series of films selected from the files of the Boston Public Library; and to several other lectures by competent and experienced instructors, e.g., Fathers Trinkle, Clarke, Messmer, Devane.

(1) Introductory lecture-demonstrations: the students will be divided into three groups on each of two days (4 and 5 August). During the Standardized Interview, they will have been asked to indicate their preferences of any two of the following three sciences: biology, chemistry, and/or physics. On this basis, and as a result of our own observations, as well as the Interest Test, the students will attend lecture-demonstrations in one science on the 4th of August, and the demonstration in a second science on the 5th of August. No more than 18 students will be allowedto select any one of the sciences. The interest stimulated here, and from the visit

to the Science Museum on 7 August, should enable the students and teachers to decide on the best science area for further specialization. The subject matter of these demonstrations will be indicated under the appropriate sections below.

(2) Lectures preceding educational trips: There will be three science lectures in the first week; they are described in the Calendar of Afternoon Activities, below. The purpose of the lectures or discussions is to guarantee that the proper benefit will be derived from the given trip. By spending the third period on the lecture, the teachers can heighten the boys' interest, and forestall needless difficulties and questions later on. The relation of each of the trips themselves to the overall objectives of the Summer Program is described in the "Afternoon Program" section. Three of these lectures are planned for the first week of the program, in order to give an educational atmosphere from the beginning, and to motivate the students in their choice of an area of specialization.

(3) Specialization program: The third periods of the final three weeks of the program will be devoted to:

1. (a) biology, (b) chemistry, or (c) physics
2. films
3. guest lectures, e.g. Fr. Trinkle's on "Art"

The opportunities available to the students in each of the science areas are delineated on the following pages.

BIOLOGY

Introduction

The aim of the biology program is exposure to specimens, with stress on scientific method and on a few key concepts throughout. Clay models, charts, and living plants and animals will be used as demonstration aids in parts of the program. Models of the cell, cell division, various organ systems, and developmental stages are available.

* * * * *

I. Objectives: (1) To show the necessity and application of mathematical skills even in this so-called "non-mathematical" science;
(2) To extend and reinforce the English project in relation to biological texts with stress on comprehension.

II. Materials & Method: (1) Be a Better Reader, pp. 16-17, 20-21, 42-43, 46-49, 50-51, 57, 80-81, 85, 92-93, 97, 104-105, 118-119.
(2) Simple demonstration experiments (cf. below).
(3) Films from Boston Public Library.

Introductory Demonstration: Demonstration of the oxygen debt after strenuous exercise by examination of the pulse rate.

Materials: Graph paper, stop watch, pencils, etc.

Purpose: (1) To demonstrate the graphical method of plotting results;
(2) To show the energy needs of the human body, and the limitations imposed upon athletes.

Techniques: The students will work in pairs, and will be asked to take an initial pulse rate, and then rates every minute for ten minutes after running up and down the stairs five times. All results will first be

recorded in tabular form; then students will be taught how to make a graph. The area under the curve will indicate the gradual payment of the oxygen debt. What this means in terms of the physiology of the human body, could then be concretely explained.

Demonstrations in the final weeks of the Program will be selected from the following:

(1) Examination of statistical concepts.

Materials: Playing cards, pennies

Purpose: To show uses of mathematics in calculating probabilities for the science of genetics.

Techniques: By playing cards and flipping pennies, the students will be taught how to calculate probabilities. These skills will then be applied to simple genetic traits, such as tongue-curling, "hitchhiker's thumb," fused vs. dangling earlobes, etc. The use of mathematics in genetics today will be pointed out.

(2) Development of concepts of proteins, fats and carbohydrates.

Materials: Be a Better Reader, pp. 92-93.

Purpose: (a) To show the student how necessary it is to make a careful reading of any science text;
(b) To point out the biochemical basis of life, and thus the necessity once again for mathematics.

Techniques: Students will read and discuss the selection cited above.

(3) Examination of the microscopic structure of the cell.

Materials: Onion epidermis; Elodea leaf; the epithelial cells lining the mouth; several microscopes; slides, cover slips; toothpicks.

Purpose: To demonstrate the concept of size, with measurement in microns; to show the use of the microscope; to point out basic differences between plant and animal cells.

Techniques: The thin onion skin layer immediately beneath the epidermis will be peeled off, and then a small section mounted in a drop of water. A small section of the Elodea leaf will likewise be mounted. With a toothpick, some of the students will scrape off some of the mucous material lining the interior of the oral cavity. This will be mixed with a drop of water and mounted. Once the technique of preparing a specimen for microscopic examination has been learned, the students will be taught to estimate size. Finally there will be a discussion of the basic differences between plant and animal cells.

(4) Discussion of microscopic differences between plants and animals.

Materials: Be a Better Reader, pp. 20-21, 46-47. Movies from Boston Public Library on same topic: "Life in a Garden," and "Gift of Green."

Purpose: (a) To show the student once again how necessary it is to make a careful reading of any science text;
(b) To point out that in some cases biology is also a qualitative science.

Techinques: Students will read and discuss the selections cited.

(5) Demonstration of the enzyme concept.

Materials: Raw potatoes, knife, hot plate, beaker of water.

Purpose: To demonstrate the enzyme concept as the basic element of any attempt at a definition of life; to stimulate the right questions, i.e., why does the raw potato turn brown? Why does the boiled potato stay white?

Techniques: A single potato will be cut into two pieces. One piece will remain on the demonstration table; the other piece will be placed into boiling water for ten minutes. The boiled potato will then be placed along side the unboiled one.

* * * * *

Besides the demonstrations listed above, the following ones could also be used. The above format is not used here, but would be developed if these demonstrations were employed.

(1) Examination of a drop of pond water, to demonstrate the variety of living species and their distribution in such small spaces.

(2) Experiment of a student breathing into a paper bag. In the course of several minutes, he breathes faster and faster, and soon must stop breathing altogether. Questions: Is this due to a lack of oxygen? Why? Why not? If not, what is the cause of the student's faintness? How would one test for this? Conclusion: if the carbon dioxide is removed, while a fresh supply of oxygen is constantly introduced, no faintness occurs. If the CO_2 remains, along with fresh oxygen, faintness occurs.

(3) Dissection of a living frog. This structural excursion will stimulate medical desires in some (it always does). However, structure will be related to function, and give all the students an esteem for the working of his own bodily systems.

(4) Demonstration of concepts of growth and development by

(a) Examining the development of the chick at several different stages; and

(b) Examining frog eggs at different stages. Living eggs will be used.

(5) The frog eggs will be obtained by the following preliminary demonstration process: living frogs will be pithed to obtain both spinal and "operated" frogs. Females will be induced to lay eggs by using initial male pituitary extracts injected into the female abdomen.

A sperm suspension will be prepared to fertilize the eggs layed. This whole process will demonstrate how man can interfere at will, and control the scientific situation.

CHEMISTRY

General Objective: To provide motivation for achievement in mathematics and English.

General Means: Presentation of science as a fascinating and profitable area of endeavor which requires a thorough knowledge of mathematics and English.

Demonstration Experiment I: The Mohr Chloride Assay

Specific Objective: To show the importance of basic mathematical relations in chemistry through demonstration of the volume-concentration relation, $V_1C_1 = V_2C_2$

Materials: 1 buret; 2 beakers; 1 sample of NaCl; Ag_2CrO_4 indicator; 1 liter of $AgNO_3$ (0.1 molar); 1 magnetic stirrer and stirring bar.

Purpose: To demonstrate the volume-concentration relation in chemistry and show its importance to the chemist.

Techniques: (1) The $AgNO_3$ and Ag_2CrO_4 solutions to be used are described in terms of concentration and the structure of electrolytes in solution.

(2) A sample of crystalline NaCl is weighed out and dissolved in 100 ml of distilled water.

(3) 2 ml of Ag_2CrO_4 indicator are added.

(4) The sample is titrated with .1 m $AgNO_3$ to the deep red end point.

(5) The experiment is repeated with different size samples of chemicals, and the ml. of titrant required are recorded.

(6) The volume-concentration relation is deduced from the results.

(7) The importance to the chemist of volume-concentration calculations is discussed.

Demonstration Experiment II: Generation of CO_2

Specific Objective: To show the importance of basic mathematical relations in chemistry through demonstration of the ideal gas law, $PV = g/M\ RT$.

Materials: 1 200 ml separatory funnel; 1 liter of 6M H_2SO_4; 1 500 ml R.B. flask; 1 2-liter gas bottle; 1 pneumatic trough; 1 sample of $NaHCO_3$; 1 candle; 1 strip of magnesium ribbon

Purpose: To demonstrate the $PV = g/M\ RT$ relation in chemistry, and to show its application and importance.

Techniques:

(1) A weighted sample of $NaHCO_3$ is placed in the 500 ml RB flask.

(2) A 200 ml separatory funnel containing 150 ml of 6 M H_2SO_4 and a tube leading to the gas bottle in the pneumatic trough are connected to the flask by an air tight, 2 holer stopper.

(3) The amount of gas to be generated is calculated by the $PV = g/M\ RT$ relation.

(4) Excess $6MH_2SO_4$ is added from the separatory funnel, and the gas generated is collected, the volume measured and the gas stored in the 2 liter bottle.

(5) The properties of CO_2 are demonstrated by pouring it onto a lighted candle to extinguish it, and by extinguishing a burning Mg ribbon by immersion.

(6) The importance to the chemist of prediction by calculation is discussed.

Titles of other Demonstration-Experiments:

III Silvering a Beaker

IV Precipitation of AgCl - The Solubility Product

V Acid-Base Indicator Color Change - The PH Scale

VI Chromatic Emulsions - Particle Size

PHYSICS

General Objective: To stimulate interest in science, and to show the use of mathematics in physics.

Specific Objectives:

(1) The principle behind hydraulic brakes and the hydraulic lift will be explained in order to stimulate interest in science, and the application of mathematical proportion will be indicated to show the use of mathematics in physics.

Procedure: There will be a demonstration of the hydraulic principle by means of an hydraulic jack, and a discussion about hydraulic brakes and the hydraulic lift, with a blackboard illustration of the hydraulic lift.

Materials: Hydraulic jack, handle, weights, writing materials, etc.

Purpose: To stimulate interest, and to show the mathematical proportion (input area to output area and input force to output force).

Techniques: Demonstrate the hydraulic jack: get student ideas of what happens. Explain concept of pressure in a closed vessel. Indicate by blackboard diagrams the application to hydraulic brakes and hydraulic lift. Show similarity in mathematical as well as physical situations.

(2) The principle behind the pulley as a machine will be explained, and the pulley will be demonstrated, again to stimulate interest in science and to show the use of mathematics in physics.

Procedure: Pulleys will be set up with various weights; a model block and tackle, and a model differential pulley will also be set up.

Materials: Pulley, block and tackle, differential pulley, weights.

Purpose: To acquaint the student with the physical principle of the pulley and the mathematical statement of proportion between input force and output force and the number of lines of support.

Techniques: Ask the students what they think about different arrangements of the pulleys, and experiment to evaluate their suggestions. Discuss the different pulley arrangements to determine the common principle involved in all of them. Ask questions which involve the student in the mathematical model of proportion.

(3) The principle behind the level as a machine will be explained, and the level will be demonstrated to stimulate interest in science and to show the use of mathematics in physics.

Procedure: The lever will be demonstrated with board, fulcrum and weights. Blackboard diagrams of crowbar, hammer, jack handle will serve to show that the same principles exist in each.

Purpose and Techniques: Similar to (2).

(4) The phenomenon of sound as wave energy will be explained; pitch and resonance will be demonstrated by means of tuning forks and a resonance cavity, to stimulate interest in science. The mathematical statement of wave motion will be explained to show the use of mathematics in physics.

Procedure: Similar to above, except for materials.

(5) The phenomenon of light as wave energy will be explained; the principle behind the pinhole camera will be demonstrated; the mathematical situation will be shown to be similar to that of sound; objective as above.

Procedure: Similar to above, except the materials, i.e., light source, card with pinhole, holder, screen.

(6) The phenomenon of magnetism will be demonstrated to introduce the idea of an energy field, where we have a force varying inversely with the square of the distance from an energy center. Objective as above.

Procedure: Similar to above, except the materials, i.e., a variety of magnets, iron filings.

FILMS

This science demonstration experiment project will be supplemented by science films including the following, all of which are available at the Boston Public Library:

Atomic Achievement
Atomic Energy
Colour of Life
Electricity
Electrons
Fallout
Gas Turbine
Hemo the Magnificent
Kingdom of Plastics
Lever Age
Magnets
Our Mr. Sun
Receiving Radio Messages
Sending Radio Messages
Story of Dr. Carver
Strange Case of Cosmic Rays
Transonic Flight
Unchained Goddess
Unlocking the Atom
Vacuum Tubes

3rd Period Lectures

Art Lecture on 4 August by Rev. Joseph G. Trinkle, S. J.

History Lecture on 6 August by Mr. William J. Cullen, S. J.

Science Lecture on 7 August by Rev. John J. Williamson, S. J.
Mr. Richard T. Cleary, S. J.
Mr. Roger C. Phillips, S. J.

Seismological Lecture on 14 August by Rev. David M. Clarke, S. J., with Rev. William Messmer, S. J. and Rev. John Devane assisting.

Afternoon Program . . .

The afternoon program provides the boys with an opportunity to experience new environments besides the confining limits of their own neighborhoods. The program will accomplish this through (1) trips to sites of cultural, historical, or scientific interest; and (2) through an organized program of recreation.

Although the program is subject to slight changes, it will remain substantially as described immediately below.

I. Sites of Interest

(1) Museum of Fine Arts. Rev. Joseph G. Trinkle, S. J., will talk to all of the students on 3 August during the 3rd period, preliminary to their being taken on a guided tour of the Museum that afternoon. Fr. Trinkle is an artist who has attended art school. Through this trip, the students should become aware of the world of art and sculpture.

(2) Lexington and Concord. Mr. William J. Cullen, S. J., will conduct the 3rd period class on 6 August, pointing out in advance (by means of a film) the significance of the historical sites the students will view that afternoon. The Lexington green, the "rude bridge that arched the flood," etc., will be viewed in a way that will stimulate proper attitudes of patriotism and social involvement.

(3) Science Museum. The three instructors involved in biology, chemistry, and physics, will conduct an informal discussion during the 3rd period on 7 August. A preliminary trip to the Museum focusing on selected displays will have been made. The trip that afternoon will give the students a feel for the different areas of science; this interest can then be pursued in the Third Periods programs of the next three weeks.

(4) Weston Seismological Observatory. Instead of a 3rd period at B. C. High School on the afternoon of 18 August, the boys and teacher will leave early for Weston College, and after lunch there, Rev. David Clarke, S. J. will direct the

students a tour of the observatory, explaining the origin and detection of earthquakes, the use of computers, etc. He will be assisted by two or three other qualified scientists employed at the Observatory, thus insuring small groups.

(5) Boston College Campus. A brief tour of the campus will be conducted on 13 August. When the boys see the advantages of a college education, and realize that it is within their grasp if they work hard, they may be motivated to better achievement.

(6) Washington Village Library. During the three Monday afternoons that the boys spend at the MDC ballfield near Carson Beach, small groups will visit the library across the street. The librarians have agreed to teach the boys the fundamentals of the library.

II. Recreational Program

Note: The following equipment has been obtained: 3 softballs, 1 football, 3 baseballs, 3 baseball bats, 3 softball bats, 2 basketballs, 1 volleyball and 1 net, 2 beach balls, 2 playground balls. The boys have their own gloves, and will bring them on the days they need them.

(1) Weston College. Cookout facilities are available in addition to a large swimming pool, softball and baseball fields, handball courts, basketball courts, etc. Six afternoons at Weston are planned.

(2) MDC Ballfield. This field is a ten minute walk from B. C. High School. The teachers will attempt to get the boys interested in the sports facilities near their own homes, as a deterrent to hanging on the street corner.

(3) Scituate Beach. Arrangements have been made through Mr. William McNeill, a history professor at B. C. High, to use a semi-private beach in Scituate.

(4) Baseball Games. Mr. Thomas Dowd of the Boston Red Sox has invited the boys, free of charge, to attend two ball games on 20 August and 27 August.

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On the Calendar of Afternoon Activities, Wednesday afternoons have been left open to take care of any contingencies arising from rain, sickness, and the like.

The bus will leave Boston College High School each day before 1:00 P.M., and will have the boys back at their homes by dinner time; on the rare occasions (e.g., beach days) when a slightly later return is contemplated, parents will be informed in advance.

Schedule for Class Days: Mornings

Monday through Friday, 3 August to 28 August, will be divided into academic periods in the mornings, and recreational periods in the afternoons. One afternoon each week will be free.

The students will be divided into four groups of approximately twelve students.

1st period: 9:00 - 9:50 A.M.:

Group	Subject
A	English
B	English
C	Mathematics
D	Mathematics

2nd period: 9:55 - 10:45 A.M.:

C	English
D	English
A	Mathematics
B	Mathematics

Break period: 10:45 - 11:05 A.M. (milk and cookies)

3rd period: 11:05 - 12:05 (cf. 3rd period activities section below.)

Calendar of Afternoon Activities: 3 August - 28 August

Monday (3rd)	Monday (10th)	Monday (17th)	Monday (24th)
3rd period: Art lecture by Rev. Joseph G. Trinkle, S. J.	MDC ballfield for sports activities	MDC ballfield for sports activities	MDC ballfield for sports activities
Trip to Museum of Fine Arts	Washington Village Library	Washington Village Library	Washington Village Library
Tuesday (4th)	**Tuesday (11th)**	**Tuesday (18th)**	**Tuesday (25th)**
3rd period: Science demonstration	Trip to the beach	Trip to the beach	Weston College
Weston College			
Wednesday (5th)	**Wednesday (12th)**	**Wednesday (19th)**	**Wednesday (26th)**
3rd period: Science demonstration	Free afternoon	Free afternoon	Free afternoon
Free afternoon			
Thursday (6th)	**Thursday (13th)**	**Thursday (20th)**	**Thursday (27th)**
3rd period: History lecture by Mr. Wm. Cullen, S. J.	Boston College campus	Red Sox baseball game	Red Sox baseball game
Trip to Lexington-Concord; Weston College	Weston College		
Friday (7th)	**Friday (14th)**	**Friday (21st)**	**Friday (28th)**
3rd period: Science lecture	Weston Seismological Observatory for tour by Rev. David Clarke, S.J. & Rev. Wm. Messmer, S.J.		Free Afternoon End of Program
Trip to Science Museum			

BUDGET

3 week preliminary period: 11 July - 1 August

Hertz car rental (11 July - 21 July)	$ 122.35
Gas for Hertz car	13.20
Lunch money for Jesuits for 3 weeks	150.00
Milk, doughnuts, paper cups, napkins for 20, 21, 22, 27, 28, 29 July	30.00
Pencils, paper & supplies	10.00
Telephone	20.00
Bus transportation	180.00

4 week program: 3 August - 28 August

55 copies of Be a Better Reader @ $1.70	93.50
2 Teacher's Manuals	3.50
52 dictionaries @ $.60	31.20
50 notebooks @ $.25	12.50
Science experiments, frogs, etc.	50.00
Academic supplies: mimeograph materials, paper, pencils, etc.	200.00
Printing of certificates (estimate)	15.00
Bus transportation, assuming we need only one bus (estimate $30.00 per day)	600.00
Recreational costs:	
Sports equipment	100.00
Ball games ($.50 each)	50.00
Lunch program	1,200.00
Contingency fund	903.75
Station wagon rental (6 weeks estimate) $290.00 per month; $5.00 per week for insurance, and 6¢ per mile plus gas	625.00
Insurance for boys	90.00
TOTAL	$4,500.00